A Tool for Modeling and Simulation of Irregular Shape and Shrinking Salami During Drying

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This paper describes the extension of a previously developed mathematical model of sausage drying in order to account for irregular geometry and volume shrinking during drying. By using the COMSOL Multiphysics®4.3 software, a code was implemented with features of adaptability, reliability and speed of calculation. To catch the moving boundary at the air-salami interface during shrinking, the moving mesh physics was used and a correlation was applied between the actual size of sausage and that of water removed. The prediction capability of the model was tested with the results collected from the batch production of “Salsiccia dolce”, a typical meat product of Calabria region, at SSICA (Parma). The results are presented in terms of salami weight loss and time-mapping of moisture and temperature in sausage.